

Application No: 10/790,383

Response

Reply to Advisory Action Dated 05/03/2007

MAY 10 2007

Attorney Docket No: 3926.070

IN THE SPECIFICATION:

Please amend paragraph [00010] as follows:

[00010] The task, ~~with regard to the process to be provided,~~ is inventively solved thereby ~~that:~~ by a process for laser beam welding a plate, including:

welding a surface of the plate with a laser beam to form a weld seam, and
carrying out a pre- and/or post- thermal treatment in the area of the weld seam with the
same laser beam by guiding the laser beam over the surface prior to and/or after the welding,
wherein the laser beam has substantially constant output for both the welding and the
thermal treatment,

wherein the welding and the thermal treatment are separated timewise from each other in
such a manner that the temperature reduction of the respective radiated surface from the point in
time of the first radiation to the point in time of the subsequent radiation is less than 50%, and

wherein during the thermal treatment the laser energy input, based on the radiated surface
area and time, is adjusted by increasing the rate of advance in such a manner that the side of the
existing or to-be-formed weld seam opposite to the laser beam is warmed by at least 10°C.

Please delete paragraph [00011].

Please amend paragraph [00017] as follows:

[00017] In a preferred embodiment of the inventive process the laser beam is ~~directed to~~
guided along the surface by means of a scanner device. A scanner device is a particularly rapid
and flexible beam deflection device, for example a mirror system (comprising at least a single- or
multi-axial controllable pivotable mirror) or also an acoustic-optical modulator. In this
deflection device a mechanically adjustable optical element can also be included, which enables
a rapid change in the focal length of the laser beam (as for example in a 3D-scanner device).

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Please amend paragraph [00020] as follows:

[00020] Alternatively, or additionally thereto, a further widening of the working or treatment surface can be accomplished by movement of the illumination surface by means of minimal deflections of the laser beam (superimposing a transverse movement component upon the main advance direction; so-called beam spinning or beam wagging). The beam spinning can be employed in both process steps, or even only with one step, preferably the warming step. The transverse movement component is, for example, a circular movement component.